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Souvenir of the Chicago Drainage Canal.

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Souvenir of the . . .

Chicago Drainage Canal

PHOTO-GRAVURES

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BROOKLYN, N. Y.

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KANKAKEE, ILL.

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The Chicago Drainage Canal,

THE greatest of its kind in the world in point of skillful engineering, magnitude and manner of construction, was created for the double purpose of giving sanitary drainage to the city of Chicago, and ultimately forming a ship canal connecting the Great Lakes with the Gulf of Mexico through the Illinois and Mississippi rivers.

By an act of the Illinois legislature in 1889 the officials necessary for promoting the construction were first elected by popular vote in the city of Chicago in 1890, with power to levy and collect taxes from the people of Cook county directly benefited by such improvement.

The object to be accomplished was the entire reversal of the Chicago river current by diversion of the city sewage from the lake into the ancient waterway of the Desplaines river and thus preserving the city's water from constant pollution.

One of the necessary conditions was the widening and deepening of the Chicago river from the lake to Robey street, a distance of six miles. From Robey street the excavations for the canal proper begin. From there to Willow Springs, a distance of a little more than twelve miles, comprised the Glacial Drift or Earth Sections. These were lettered, beginning at Willow Springs, from "A" to "O" inclusive, omitting "J."

Through these earth sections the channel varies from 110 to 202 feet at the bottom, and 198 to 290 feet at the water line, with an average depth of 22 feet, and a fall of 1⅝ in. per mile.

At Willow Springs this channel narrows to a uniform width of 160 feet at the bottom, and 162 feet at the top, with a fall of 3¼ inches to the mile, comprising the Walled or Rock Sections, which extend about 15 miles to Lockport. Starting at Willow Springs these rock sections were numbered from 1 to 15 inclusive, terminating at Lockport in a widened Windage Basin, for turning vessels around, and the Controlling Works.

The Controlling Works, a triumph of modern engineering, were built for the sole object of regulating the flow of the lake water into the Desplaines river, and are so constructed as to meet possible fluctuations in Lake Michigan from 5 feet above to 8 feet below its average

level. They consist of seven 20x30-foot metal sluice gates with necessary masonry work, and a 160-foot bear trap dam, dimensions sufficiently large to not only control the present flow of 300,000 cubic feet a minute, but capable of meeting all future requirements.

An additional difficulty to overcome was the diversion of the Desplaines river by the construction of 13 miles of new channel, and 19 miles of levee to control the water of the Desplaines water shed. At the head of this river diversion it was necessary to make a safety valve in the shape of a 397-foot concrete dam called the Spillway, over which there is no flow of water until the volume reaches 300,000 cubic feet a minute.

The work on the Desplaines below Lockport consisted in widening, straightening and deepening the river to give it the necessary flowing capacity of 1,500,000 cubic feet per minute. This involved a costly amount of work in Joliet in removing and rebuilding dams and locks, construction of a massive concrete retaining wall, reconstruction of bridges, and to admit of extensive water power development, which is the property of the State.

The bridges built on the main channel are 6 for public highways and 7 for railroads, all of which are movable and thoroughly modern structures, and represent a combined weight in iron and steel of 22,678,000 pounds.

Contracts were let for the excavating in sections, and various interesting and novel methods of carrying out these contracts were made use of, the grand total of 43,478,659 cubic yards of earth and rock being removed.

The first work on the canal was begun just below Lamont on Shovel Day, September 3d, 1892, and the first water turned into the canal January 2d, 1900.

The total expenditures, including $3,500,000 interest charges, to January 1st, 1900, were $33,525,691.20, $24,000,000 of which was for construction, $1,000,000 for river diversion, $2,500,000 for bridges, over $3,000,000 for right of way, $2,000,000 for administration, and nearly $100,000 for maintenance.

This colossal work on the part of the people of the city of Chicago will go down into history as one of the marvels of the Nineteenth Century.

SEC. I. GENERAL VIEW.

SEC. A-I. RETAINING WALLS.

SEC. I. COMPRESSED AIR HOIST.

CANTILEVER CONVEYOR 640 FEET LONG.

SEC.2. CABLE WAY SKIP.

SEC.3. LOADING SKIPS.

SEC. 4. LIDGERWOOD CABLE TOWER.

SEC. 3. GENERAL VIEW.

SEC. 5. GENERAL VIEW OF CANAL AND OLD ILLINOIS AND MICHIGAN CANAL.

SEC. 6. GENERAL VIEW OF LIDGERWOOD CABLE TOWERS.

SEC. 7. McMILLER DERRICK.

SEC. 6. LOADING SKIPS.

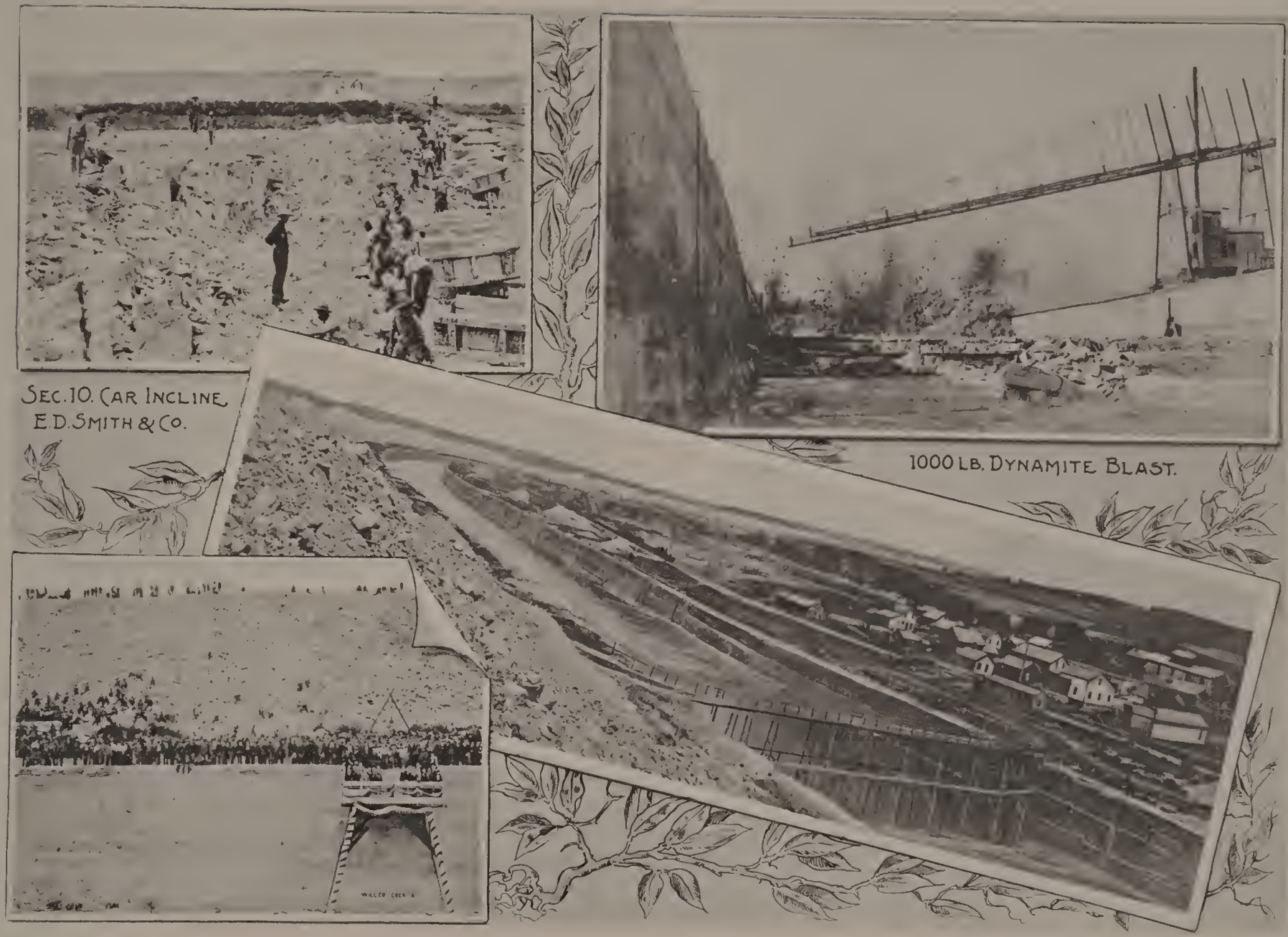
SECS. 6 & 5. GENERAL VIEW LOOKING EAST.

SEC. 8. GENERAL VIEW. LOOKING WEST.

SEC. 8. LOADING CABLE WAY SKIPS.

SEC. 7. INCLINE HOIST.

SEC. 9. CABLE TRAMWAY FOR HOISTING CARS.

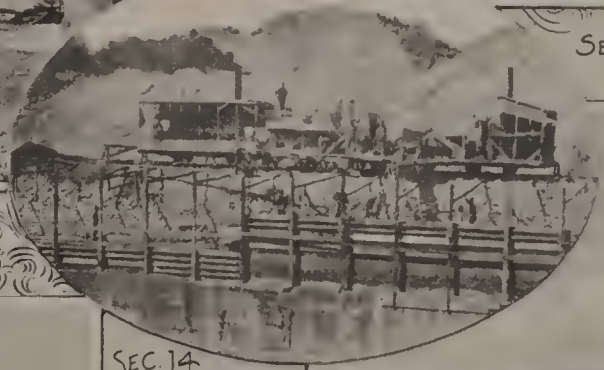


SEC. 10. DEDICATION, SEPT. 3RD, '95 OF COUNTY LINE STONE.

SEC. 11 & 12. CANAL CURVE AND VILLAGE OF ROMEO.

SEC. 12. BIG STONE THROWN OUT BY BLAST.

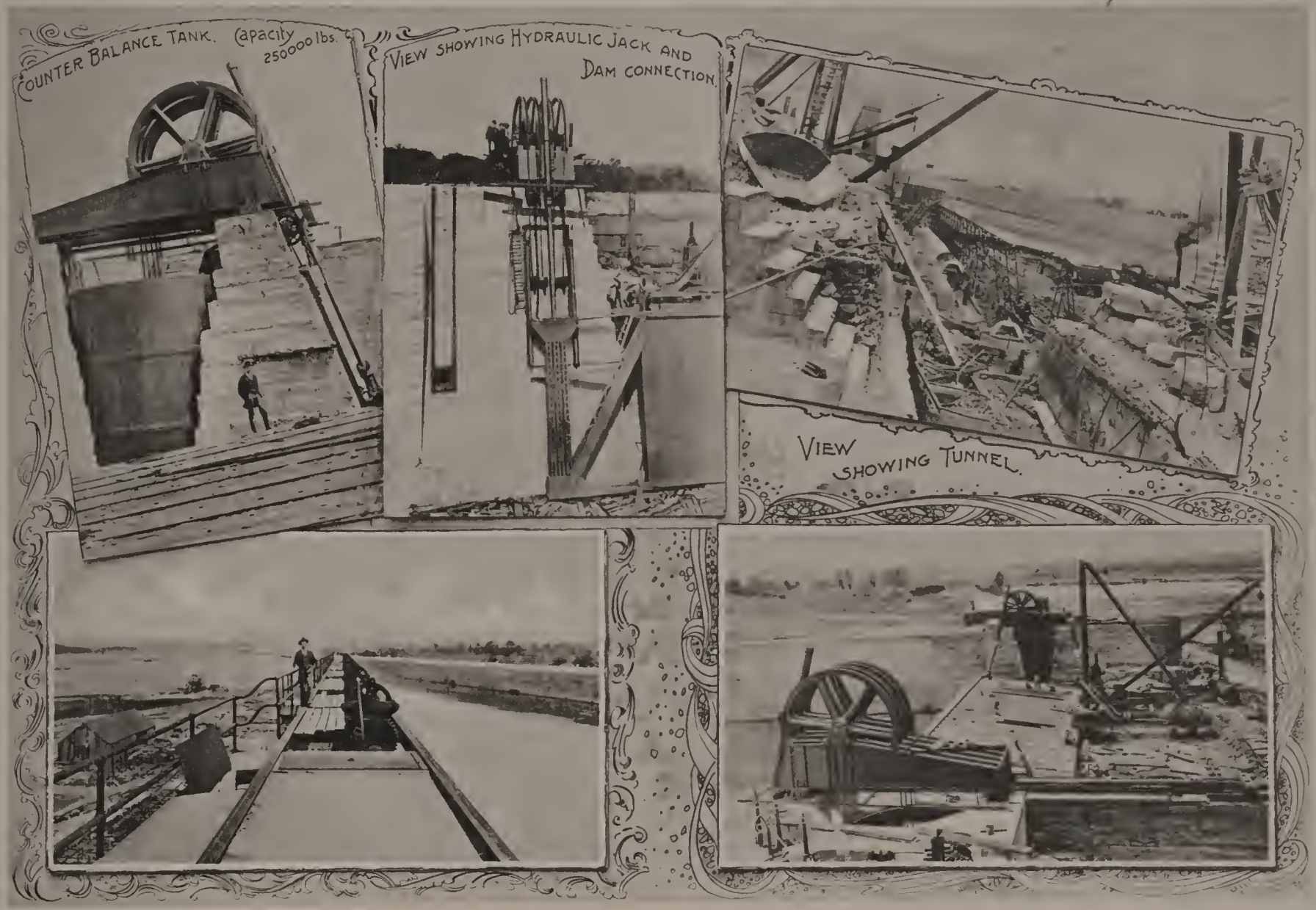
SEC. 13. GENERAL VIEW.



SEC. 14. STONE-CRUSHER AND CEMENT-MIXER.

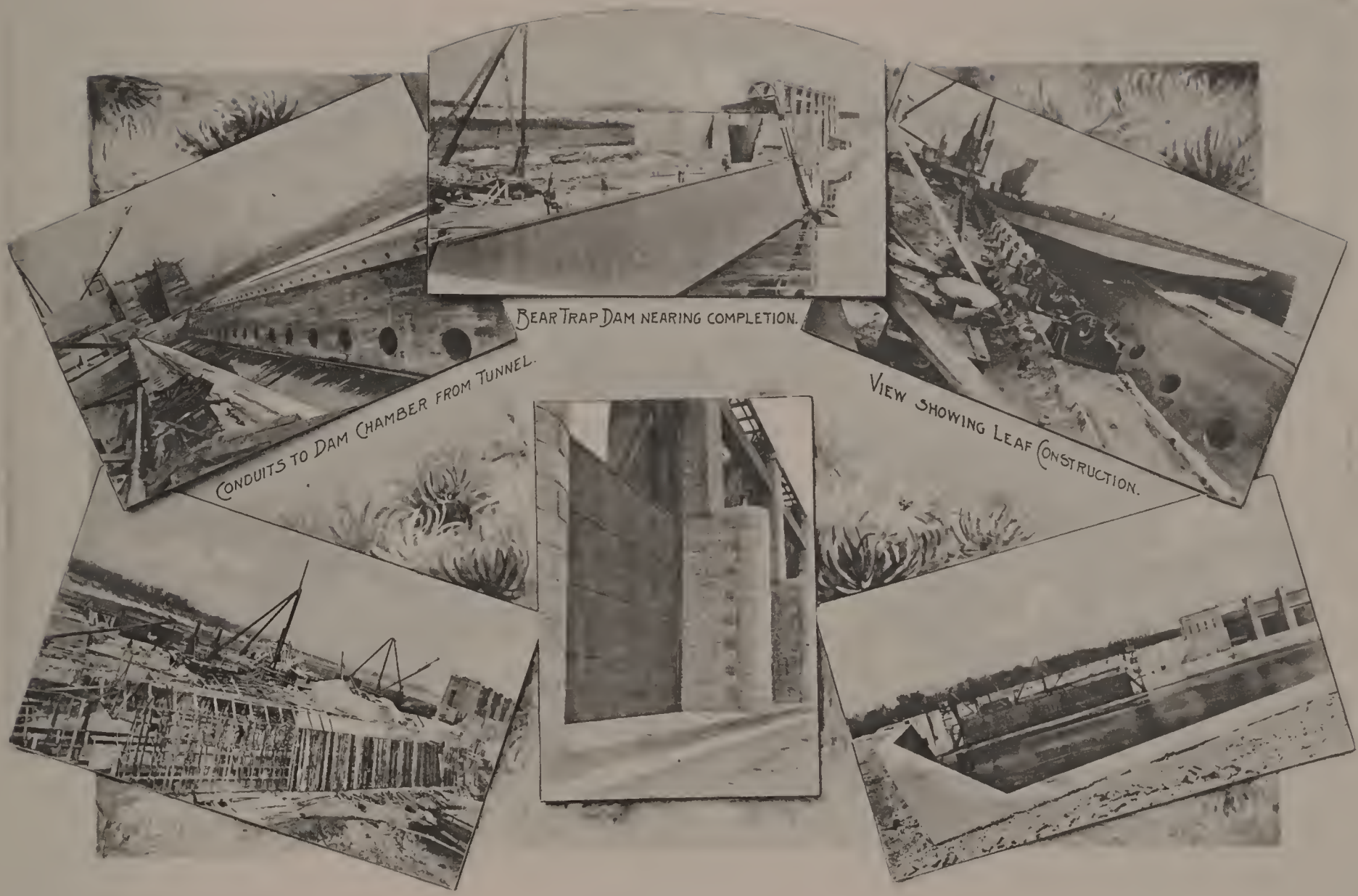
SEC. 14. GERALDINE DOUBLE BOOM REVOLVING DERRICKS

SEC. 12. GENERAL VIEW.



Controlling Gear of the Stoney Gates.

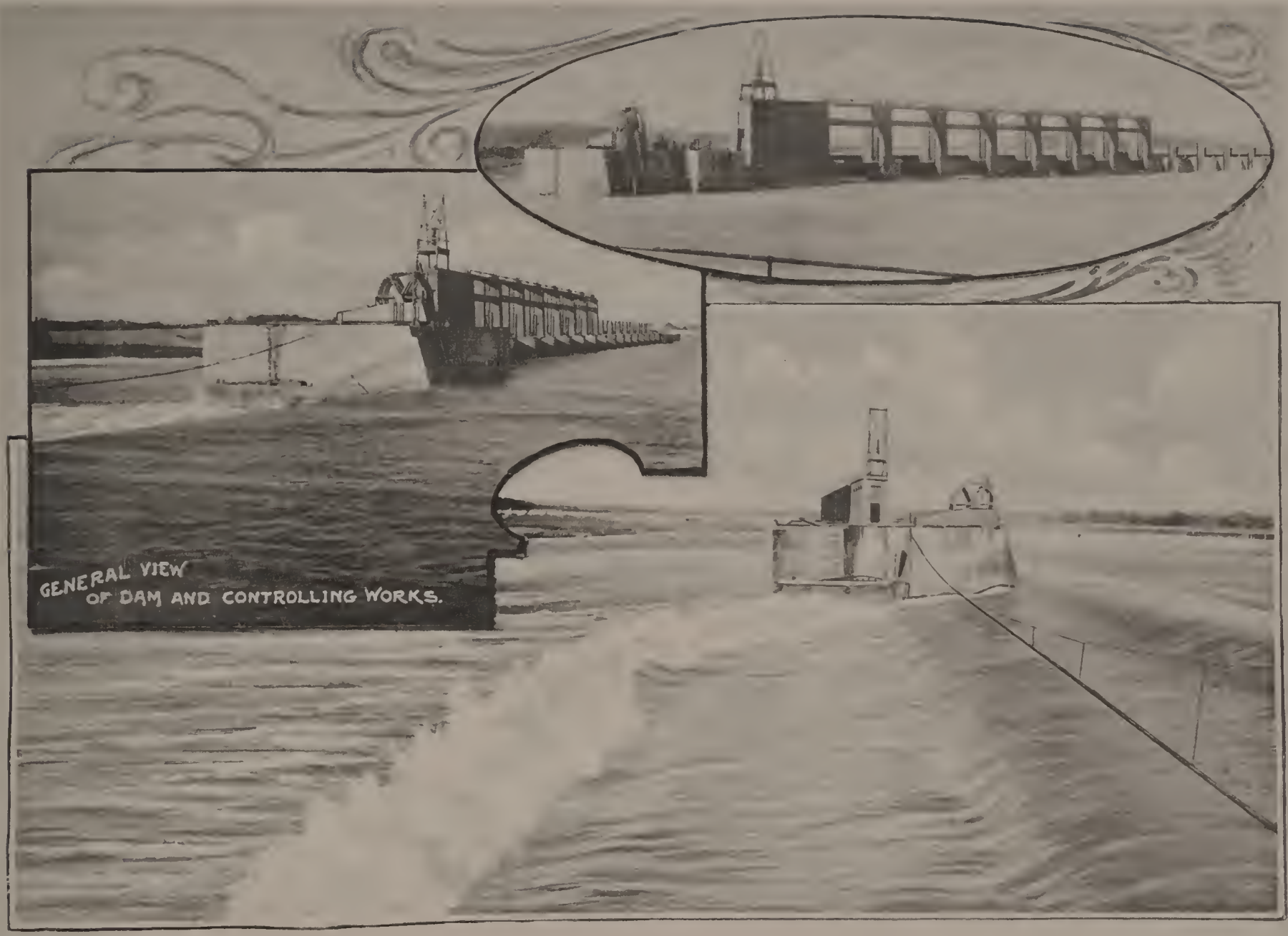
Sec. 15. Top View of Hydraulic Jacks.



View of Steel Frame Work for Dam.

Sluice Gate.

View showing Dam and Windage Basin.



BEAR TRAP DAM, SHOWING FLOW OF 300,000 CUBIC FEET A MINUTE.

BLOWING UP OF THE JEFFERSON ST. BRIDGE.

TAIL RACE AT JACKSON STREET, JOLIET.

SPILL-WAY DAM AT THE HEAD OF THE NEW DES PLAINES RIVER CHANNEL

TURNING IN OF THE WATER, JAN. 2ND, 1900.

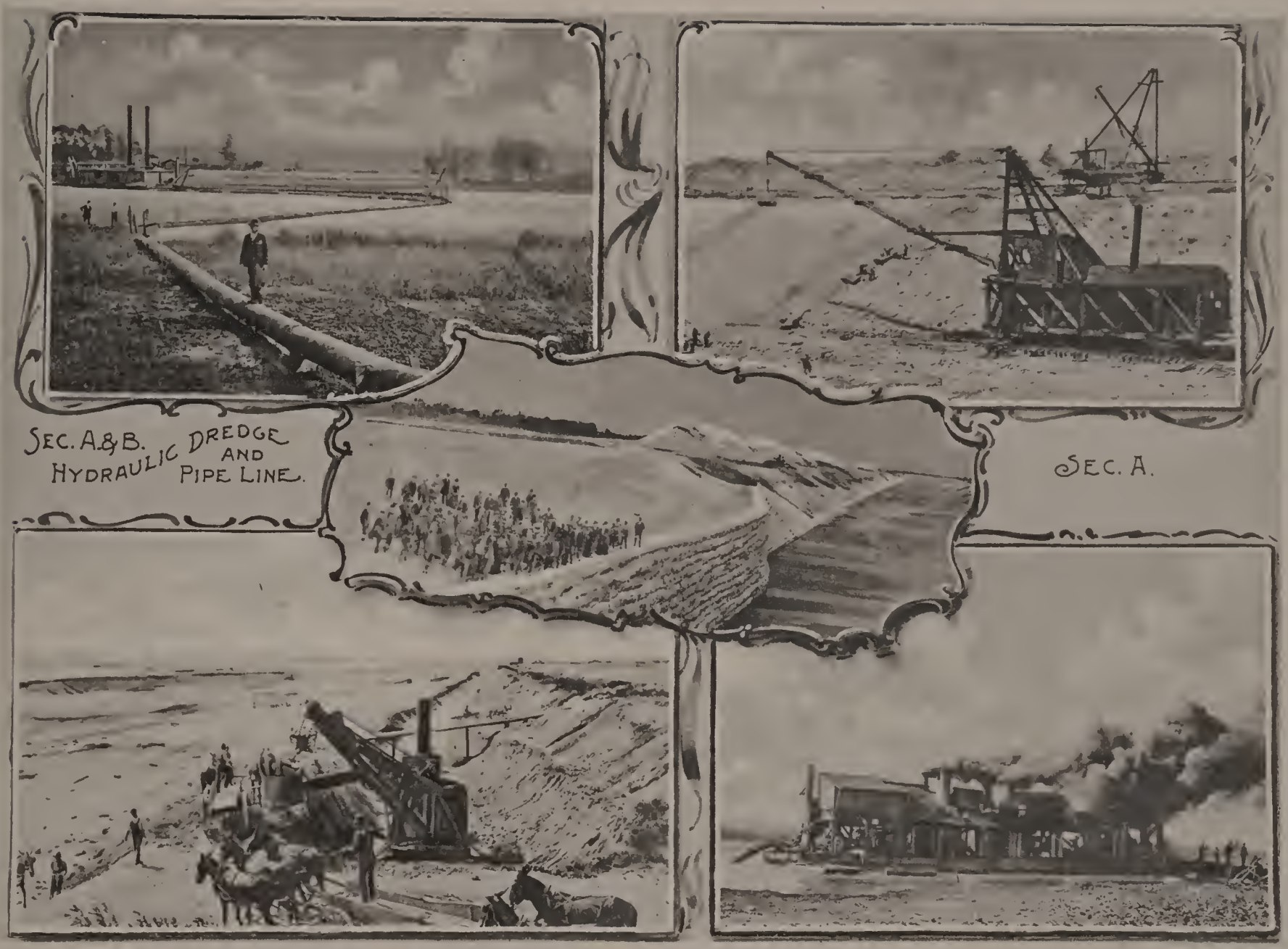
GOVERNOR TANNER AND MEMBERS OF THE CHICAGO AND STATE DRAINAGE BOARD.

SECRETARY ALGER AND BOARD OF TRUSTEES.

ROLLER TRAMS FOR SPRING BRIDGE.

CHICAGO OUTER BELT R. R. BRIDGE.

SANTA FE R. R. BRIDGE.



SEC. A. SECRETARY ALGER AND PARTY, MAY 5TH, 1899.

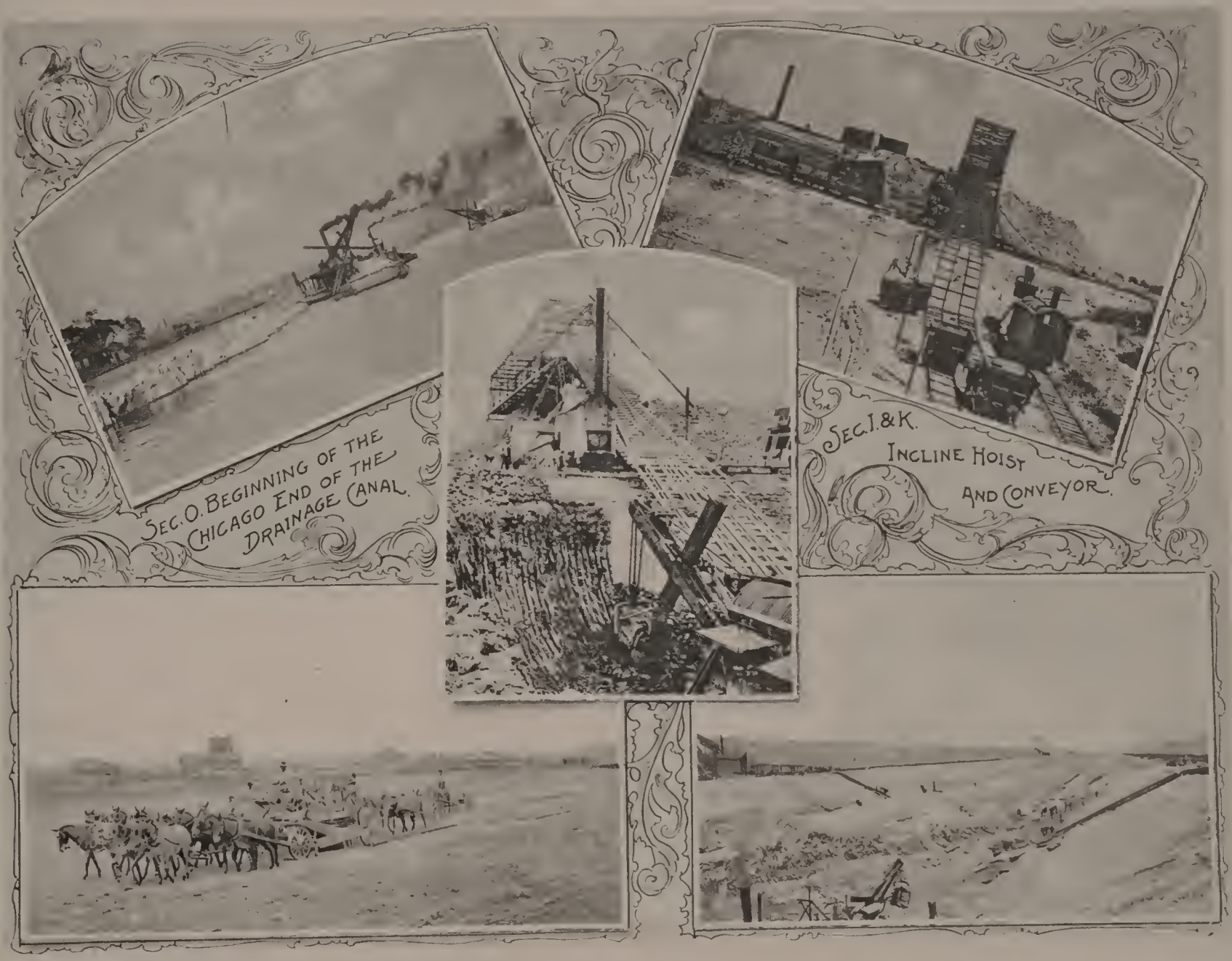
SEC. A. GENERAL VIEW.

SEC. C SOOEY SMITH HYDRAULIC DREDGE.

SEC. K. GENERAL VIEW.

SEC. F. DIFFICULT PROBLEM.

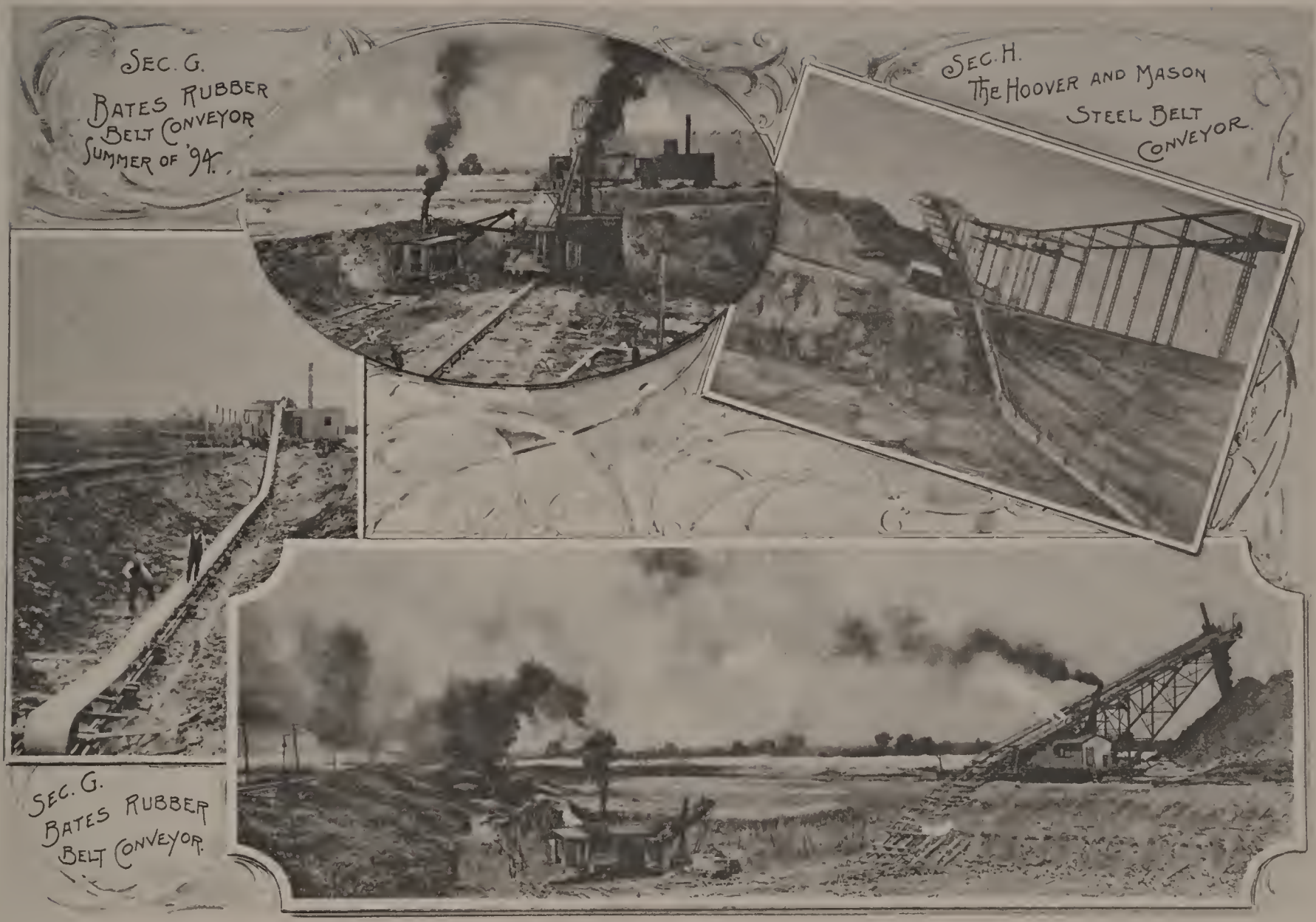
SEC. F. CHRISTY AND LOWE BRIDGE CONVEYOR.



Sec. I. & K. Bridge Conveyor.

A Twenty Horse Surface Grinder at work.

Sec. L. & M. General View.



SEC. 5. LIDGERWOOD STEAM DREDGE AND HOIST AT WORK.

Sec. E. Excavation and Glacial Drive.

General View of Sec. E, showing abutments for Swing Bridge.

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